

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

690 Walnut Ave.St. 150

Vallejo, CA 94592-1133

(707) 649-5453

(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003173**Date Inspected:** 17-Jun-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower**Summary of Items Observed:**

The Quality Assurance (QA) Inspector Gregory Bertlesman arrived on site at the Zhenhua Port Machinery Company facility on Changxing island, China to periodically monitor welding and Quality Control functions. While on site the Quality Assurance Inspector observed and/or discovered the following.

**OBG Sub-Assembly Bay 1**

The Quality Assurance Inspector witnessed the welding of the production panels DP-277-001. The welding of the 3 rib panel was performed on gantry 2 to produce the partial joint penetration groove weld. Upon completion of the gas metal arc welding (GMAW) root pass ZPMC performed the subsequent submerged arc welding (SAW) pass. The parameters appeared to be within welding procedure specification for dual process WPS-B-T-2342-U1 (U-rib)-3.

The Quality Assurance Inspector witnessed ZPMC perform magnetic particle testing to the GMAW tack welds on Deck Panel DP-493-001. Several tack welds were marked for repair. The testing was still in progress upon completion of the shift.

**Bay 2**

The Quality Assurance Inspector observed ZPMC manually reaming bolt holes with a socket wrench from the exterior of the 114M Tower Mock-up, exterior bolted connection plate. Below is a digital photograph illustrating the work in progress.

**OBG Sub Assembly Bay 3**

# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

The Quality Assurance Inspector observed ZPMC performing in process welding of Deck Panel DP-035-001 plate stiffener to deck plate connection. Quality Control Inspector Wu Zhi Feng was monitoring the welder. The welders were using the flux cored arc welding process to produce the fillet welds in the horizontal position. The part was stationary on gantry 2 while the welding machine was on tracks to facilitate welding along the length of the part. The Quality Assurance Inspector recorded the welding parameters at the welder's station and found the parameters to meet the minimum requirements of welding procedure specification WPS-B-T-2233-B-U2-F. The Quality Assurance Inspector witnessed Quality Control measuring the interpass temperature using a calibrated infra-red temperature measuring device.

The Quality Assurance Inspector observed ZPMC performing fit-up and tack welding operations to Deck Panel DP-046-001. ZPMC was utilizing the SMAW process to produce the fillet tack welds in the horizontal position.

The Quality Assurance Inspector observed ZPMC performing in process welding operations to the Side panel SP-300-001-038 insert plate. ZPMC was utilizing the submerged arc welding process to produce the complete joint penetration weld in the flat position. The Quality Assurance Inspector witnessed a ZPMC Quality Control Inspector measure the welding parameters at the welder's station and found the parameters to meet the minimum requirements of welding procedure specification WPS-B-T-2221-B-L2c-S-1. The Quality Assurance Inspector witnessed Quality Control measuring the interpass temperature using a calibrated infra-red temperature measuring device.

## Bay 4

The Quality Assurance Inspector observed the build up by welding of Diaphragm Flange for joint ESD1-SA317 6A/16B. It appeared the welding was performed the previous shift and its not known what welding procedure specification was used to perform the welding. The Quality Assurance measured the amount of build up to be approximately 18 millimeters. The build up was being performed in an effort to make the root opening of the complete joint penetration splice within tolerances. Below is a digital photograph illustrating the build up.

The Quality Assurance Inspector witnessed ZPMC heat straightening Side Plate SP-178A. ZPMC Quality Control was observed measuring the base metal temperature using a calibrated infra-red temperature measuring device.



---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

### Summary of Conversations:

As stated in the contents of the above report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco(707) 552 7715, who represents the Office of Structural Materials for your project.

---

<b>Inspected By:</b>	Bertlesman,Greg	Quality Assurance Inspector
----------------------	-----------------	-----------------------------

---

<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer
---------------------	-------------	-------------